

# Costs of Ownership and Operation

The management decision to own a machine, to custom hire operations performed, or to custom perform operations is partially determined by cost, which is heavily influenced by the amount of use realized over the period of machine ownership. Estimates of fixed and variable costs per hour can be approximated using the following steps. Unless accurate records are used to estimate costs, variability in machine and operator efficiencies can cause actual results to be significantly different from estimated results.

A. Acres per hour = Acres covered in normal day ÷ hours in normal day = \_\_\_\_\_ acres ÷ \_\_\_\_\_ hours = \_\_\_\_\_

B. Average investment = (Original cost + Trade-in value) ÷ 2 = (\$ \_\_\_\_\_ + \$ \_\_\_\_\_) ÷ 2 = \$ \_\_\_\_\_

C. Depreciation =  $\frac{\text{Annual Original cost} - \text{Trade-in value}}{\text{Number of years owned}}$  = (\$ \_\_\_\_\_ - \$ \_\_\_\_\_) ÷ \_\_\_\_\_ years = \$ \_\_\_\_\_

D. Interest =  $\frac{\text{Annual Average Investment}}{\text{Interest rate}}$  x Interest rate = \$ \_\_\_\_\_ x \_\_\_\_\_ % = \$ \_\_\_\_\_

E. Taxes =  $\frac{\text{Annual Average Investment}}{\text{Personal Tax rate (1)}}$  x Tax rate (1) = \$ \_\_\_\_\_ x \_\_\_\_\_ % = \$ \_\_\_\_\_

F. Insurance =  $\frac{\text{Annual Average Investment}}{\text{Insurance rate (2)}}$  x rate (2) = \$ \_\_\_\_\_ x \_\_\_\_\_ % = \$ \_\_\_\_\_

G. Total Annual Ownership Costs (Sum of C through F) = \$ \_\_\_\_\_

H. Costs per acre =  $\frac{\text{Ownership Annual Costs}}{\text{Acres Per Year}}$  = \$ \_\_\_\_\_ ÷ \_\_\_\_\_ acres/year = \$ \_\_\_\_\_

I. Per acre =  $\frac{\text{Repairs (3)}}{\text{Acres Per Year}}$  = \$ \_\_\_\_\_ ÷ \_\_\_\_\_ acres/year = \$ \_\_\_\_\_

J. Per acre =  $\frac{\text{Fuel Cost} \times \text{Fuel Gallons}}{\text{Per Hour} \div \text{Per Hour}}$  = (\$ \_\_\_\_\_ /gal. x \_\_\_\_\_ gal./hour) ÷ \_\_\_\_\_ acres/hour = \$ \_\_\_\_\_

K. Per acre =  $\frac{\text{Labor costs Daily}}{\text{Acres Per day}}$  = \$ \_\_\_\_\_ /day ÷ \_\_\_\_\_ acres/day = \$ \_\_\_\_\_

L. Total Cost Per Acre = Sum of items H through K above = \$ \_\_\_\_\_

- (1) Use local tax rate if known. One to two percent is a reasonable "guesstimate".
- (2) Use own insurance rate if known. One-half to one percent is a reasonable "guesstimate".
- (3) Use your repair expense data, if available. One percent of original price for each year machine is kept is a rough estimate; e.g., 10% per year if machine is to be used for 10 years.